



#3  
Attorney Docket No.: 20174-001810US  
Client Reference No.: CIT-2543

### DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **METHODS AND APPARATUSES FOR ANALYZING POLYNUCLEOTIDE SEQUENCES** the specification of which \_\_\_\_\_ is attached hereto or X was filed on November 6, 2000 as Application No. 09/707,737.

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56. I claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

#### Prior Foreign Application(s)

Country	Application No.	Date of Filing	Priority Claimed Under 35 USC 119

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application No.	Filing Date
60/163,742	11/04/1999
60/141,503	06/28/1999
60/147,199	08/03/1999
60/186,856	03/03/2000

I claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application No.	Date of Filing	Status
09/605,520	06/27/2000	Pending

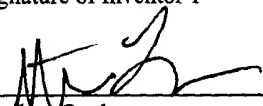
**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Hugh Wang, Reg. No. 47,163  
Joe Liebeschuetz, Reg. No. 37,505  
William M. Smith, Reg. No. 30,223  
Andrew T. Serafini, Ph.D., Reg. No. 41,303

Send Correspondence to: <b>Hugh Wang</b> <b>TOWNSEND and TOWNSEND and CREW LLP</b> <b>Two Embarcadero Center, 8<sup>th</sup> Floor</b> <b>San Francisco, California 94111-3834</b>	Direct Telephone Calls to: (Name, Reg. No., Telephone No.) Name: <b>Hugh Wang</b> Reg. No.: <b>47,163</b> Telephone: <b>650-326-2400</b>
--	--

Full Name of Inventor 1:	Last Name: <b>QUAKE</b>	First Name: <b>STEPHEN</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>San Marino</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>744 Plymouth Road</b>	City: <b>San Marino</b>	State/Country: <b>California</b>	Postal Code: <b>91108</b>
Full Name of Inventor 2:	Last Name: <b>VOLKMUTH</b>	First Name: <b>WAYNE</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>Calabasas</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>3620 El Encanto</b>	City: <b>Calabasas</b>	State/Country: <b>California</b>	Postal Code: <b>91302</b>
Full Name of Inventor 3:	Last Name: <b>UNGER</b>	First Name: <b>MARC</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>South San Francisco</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>2555 Adams Court</b>	City: <b>South San Francisco</b>	State/Country: <b>California</b>	Postal Code: <b>94080</b>

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature of Inventor 1  Stephen Quake	Signature of Inventor 2 _____ Wayne Volkmuth	Signature of Inventor 3 _____ Marc Unger
Date <b>4/4/1</b>	Date	Date



Attorney Docket No.: 20174-001810US  
Client Reference No.: CIT-2543

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Full Name of Inventor 1:	Last Name: <b>QUAKE</b>	First Name: <b>STEPHEN</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>San Marino</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>744 Plymouth Road</b>	City: <b>San Marino</b>	State/Country: <b>California</b>	Postal Code: <b>91108</b>
Full Name of Inventor 2:	Last Name: <b>VOLKMUTH</b>	First Name: <b>WAYNE</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>Calabasas</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
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Full Name of Inventor 3:	Last Name: <b>UNGER</b>	First Name: <b>MARC</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>South San Francisco</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
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Signature of Inventor 1	Signature of Inventor 2	Signature of Inventor 3
Stephen Quake	Wayne Volkmath	Marc Unger
Date	Date <b>5/4/2001</b>	Date

PA 3126493 v1



Attorney Docket No.: 20174-001810US  
Client Reference No.: CIT-2543

Send Correspondence to: <b>Hugh Wang</b> <b>TOWNSEND and TOWNSEND and CREW LLP</b> <b>Two Embarcadero Center, 8<sup>th</sup> Floor</b> <b>San Francisco, California 94111-3834</b>	Direct Telephone Calls to: (Name, Reg. No., Telephone No.) Name: <b>Hugh Wang</b> Reg. No.: <b>47,163</b> Telephone: <b>650-326-2400</b>
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Full Name of Inventor 1:	Last Name: <b>QUAKE</b>	First Name: <b>STEPHEN</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>San Marino</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>744 Plymouth Road</b>	City: <b>San Marino</b>	State/Country: <b>California</b>	Postal Code: <b>91108</b>
Full Name of Inventor 2:	Last Name: <b>VOLKMUTH</b>	First Name: <b>WAYNE</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>Calabasas</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
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Full Name of Inventor 3:	Last Name: <b>UNGER</b>	First Name: <b>MARC</b>	Middle Name or Initial:	
Residence & Citizenship:	City: <b>South San Francisco</b>	State/Foreign Country: <b>California</b>	Country of Citizenship: <b>United States</b>	
Post Office Address:	Post Office Address: <b>2555 Adams Court</b>	City: <b>South San Francisco</b>	State/Country: <b>California</b>	Postal Code: <b>94080</b>

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Signature of Inventor 1	Signature of Inventor 2	Signature of Inventor 3
Stephen Quake	Wayne Volkmuth	Marc Unger
Date	Date	Date <b>2/14/01</b>

PA 3126493 v1



Attorney Docket No. 020174-001810US  
Client Reference No.: CIT-2543

CERTIFICATE UNDER 37 C.F.R. § 3.73(b)

Applicant: Quake et al.

Application No.: 09/707,737

Filed: November 6, 2000

For: METHODS AND APPARATUSES FOR ANALYZING POLYNUCLEOTIDE SEQUENCES

California Institute of Technology, a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

certifies that it is assignee of the patent application identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application identified above.

OR

B. ☐ A chain of title from the inventor(s), of the patent application identified above, to the current assignee as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
2. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ Copies of assignments or other documents in the chain of title are attached.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: MAY 16 2001

Name: Adam Cochran

Title: The Intellectual Property Counsel

Signature: \_\_\_\_\_

## JOINT

Title of Invention: METHODS AND APPARATUSES FOR ANALYZING  
POLYNUCLEOTIDE SEQUENCES

**Date(s) of execution of Declaration:**

Filing Date: November 6, 2000

Application No.: 09/707,737; and

WHEREAS, California Institute of Technology, a corporation of the state of Delaware, located at 1200 E. California Boulevard, M/C 201-85, Pasadena, CA 91125, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

Assignors hereby authorize and request Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8<sup>th</sup> Floor, San Francisco, CA 94111-3834, to insert herein above the application number and filing date of said application when known.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Dated: 4/8/11

[Signature]  
Stephen Quake

STATE OF CALIFORNIA       )  
                                      )  
COUNTY OF                    )       ss.

On \_\_\_\_\_, before me, \_\_\_\_\_,  
personally appeared Stephen Quake, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me  
that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the  
person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

Dated: \_\_\_\_\_

\_\_\_\_\_  
Wayne Volkmuth

STATE OF CALIFORNIA       )  
                                      )  
COUNTY OF                    )       ss.

On \_\_\_\_\_, before me, \_\_\_\_\_,  
personally appeared Wayne Volkmuth, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me  
that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the  
person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Stephen Quake

STATE OF CALIFORNIA     )  
                                  )  
COUNTY OF                )     ss.

On \_\_\_\_\_, before me, \_\_\_\_\_,  
personally appeared Stephen Quake, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me  
that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the  
person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

Dated: X 5/4/2001

X U [Signature]  
Wayne Volkmuth

STATE OF CALIFORNIA     )  
                                  )  
COUNTY OF                )     ss.

On \_\_\_\_\_, before me, \_\_\_\_\_,  
personally appeared Wayne Volkmuth, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me  
that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the  
person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_



Dated: 2/14/01

  
Marc Unger

STATE OF CALIFORNIA     )  
                                      )  
COUNTY OF                    )     ss.

On \_\_\_\_\_, before me, \_\_\_\_\_,  
personally appeared Marc Unger, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me  
that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the  
person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_



#5  
Attorney Docket No.: 20174-001810US  
Client Reference No.: CIT-2543

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) & 1.27(e)) - SMALL BUSINESS CONCERN

Applicant or Patentee: Stephen Quake, Wayne Volkmuth, and Marc Unger  
Application or Patent No.: 09/707,737  
Filed or Issued: November 6, 2000  
Title: METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES

I hereby declare that I am:

- ☐ the owner of the small business concern identified below:  
☒ an official of the small business concern empowered to act on behalf of the concern identified below.

Name of Small Business Concern: California Institute of Technology  
Address of Small Business Concern: 1200 E. California Boulevard, M/C 201-85  
Pasadena, CA 91125

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES by inventor(s) Stephen Quake, Wayne Volkmuth, Marc Unger described in:

- ☐ the specification filed herewith;  
☒ Application No. 09/707,737, filed November 6, 2000;  
☐ Patent No. \_\_\_\_\_, issued \_\_\_\_\_.

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below\* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern that would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Person Signing: Adam Cochran  
Title of Person if Other than Owner: The Intellectual Property Counsel  
Address of Person Signing: 1200 E. California Boulevard, M/C 201-85  
Pasadena, CA 91125

Signature:  Date: MAY 16 2001